Overview of Front End Simulations

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Front end simulations

- Front end = all systems necessary to get beam from the target to the accelerator
  - π collection
  - π decay
  - phase rotation
  - bunching
  - precooling
  - cooling
- Front end of what?
  - neutrino factory
  - muon collider
- Code development
  - ICOOL
  - Geant…
  - COSY

Martin Berz – COSY field computations

Muon collider

- cooling is still the major issue

- ring coolers
    1. tetra solenoid ring
    2. RFOFO
        - Amit Klier – simulating RFOFO ring in Geant
        - Romulus Godang – ring simulations in Geant
    3. quad/dipole
        - Harold Kirk – recent progress on quad/dipole rings
        - Steve Kahn – realistic fields for small rings

- lithium lens
    - Yasuo Fukui – cooling channels with Li lenses

Neutrino factory

- optimization to reduce costs is major issue
  - Kevin Paul – front end optimization
- integrated system designs
  - Dave Neuffer – adiabatic buncher and linear transverse cooler
  - Alexey Poklonskiy – optimizing bunching and phase rotation
- emerging baseline design for Study 2a
  - Bob Palmer – current ideas
- last look at possible alternatives
  - Kyoko Makino – straight quad channel cooling update
  - Rick Fernow – front end with cooling ring

- discussion on Study 2a simulation plans
  - Juan Gallardo (moderator)